11th ANNUAL

NIH GRADUATE STUDENT RESEARCH SYMPOSIUM

JANUARY 13, 2015

NIH NATCHER CONFERENCE CENTER, BETHESDA, MARYLAND

Office of Intramural TRAINING & EDUCATION
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FACES OF TOMORROW'S SCIENCE

NIH GRADUATE PARTNERSHIPS PROGRAM

NIH National Institutes of Health


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SCIENCE

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Graduate Partnerships Program
Office of Intramural Training & Education
Office of Intramural Research
National Institutes of Health
US. Department of Health & Human Services

FOREWORD

Every year, the NIH Graduate Student Research Symposium highlights the excellence of scientific research conducted by graduate students at the National Institutes of Health. This year, we are celebrating more than a decade of tradition, distinction, and dedication to ***The Faces of Tomorrow's Science***. This is the largest and most exciting event of the year for us, the graduate students, where we gather to communicate our science, appreciate the breadth of work being done by our peers, and celebrate the success of our graduate community.

Since 2004, our annual symposium has provided the perfect opportunity to focus on the scientific accomplishments made by the hundreds of graduate students who perform their dissertation research at the NIH. This symposium features more than one hundred of our peers representing numerous university partnerships and nearly all Institutes and Centers across the NIH. From those who will introduce the scientific plans for their developing thesis projects to those who instead summarize the conclusions from their dissertations, the participants of this symposium span the spectrum of research specialties uniquely supported at the NIH. In the morning, we will be joined by local alumni of the NIH Graduate Partnerships Program (GPP) for a networking event, followed by four current students, who will deliver scientific talks chosen for their subject diversity and merit. In the afternoon, the speakers will join their peers to present scientific posters judged by experienced NIH postdoctoral fellows and staff scientists. Winners of the poster competition will be awarded prestigious NIH Graduate Student Research Awards generously contributed by the Office of Intramural Training and Education (OITE).

After the poster session, we are honored to feature Dr. Alfredo Quiñones-Hinojosa, internationally renowned Johns Hopkins neuroscientist and neurosurgeon, as our keynote speaker. At 19, Dr. Quiñones left his hometown of Mexicali, Mexico and after a dashed attempt (spoiled by border police earlier that day), he succeeded in meeting family in Fresno, California. In his new home, Dr. Quiñones worked as a cotton picker, painter, and welder for a railroad crew, while simultaneously putting himself through school and learning english. Years later, his hard work earned him a scholarship to the University of California Berkeley, where he majored in psychology. Under the guidance of strong mentors at Berkeley, Dr. Quiñones conducted an honors thesis in neuroscience before matriculating at Harvard Medical School. At Harvard, Dr. Quiñones garnered acclaim not only for his strong academic performance, but also for his dedication to outreach activities for less fortunate students. Between then and now, Dr. Q returned to San Francisco for internship, residency and post-doctoral work, before moving to Johns Hopkins as a professor and surgeon specializing in brain cancer and pituitary tumors. Dr. Quiñones' inspirational story and his advice will be valuable for GPP students of all disciplines.

While the symposium theme, ***The Faces of Tomorrow's Science***, celebrates current students and recent graduates, we also take time to honor the most influential people in our scientific careers – our mentors. Mentors are pivotal in our training and maturity as independent scientists, with relationships often extending years beyond graduate school. Three outstanding mentors nominated by their students will be presented awards in recognition of the guidance and unconditional support they have provided. Afterward, we will conclude our day with a ceremony to recognize those students who have graduated from their respective partnership universities in the past year. Dr. Sharon Milgram, Director of the OITE will present the recent graduates with a certificate in honor of their accomplishments.

We are delighted to have this opportunity to share our scientific contributions with the entire NIH community. We thank all of the students who have so eagerly participated in this event and those who are always there to provide us with support and guidance throughout our scientific careers. We hope that the presentations given and connections made here at the 11th Annual Symposium continue to inspire the future of scientific research at the NIH.

Acknowledgements: We are grateful to the Training Directors and Scientific Directors of the NIH Institutes & Centers, the GPP Partnership Directors, and the Graduate Student Council (GSC) for their unceasing support of the symposium and the graduate student community. We would like to thank Dr. Natasha Lugo-Escobar, Dr. Gail Seabold and Dr. Ulli Klenke for organizing the symposium poster session. We also appreciate the effort and dedication of the postdoctoral fellow and staff scientist judges who made the poster competition possible. We thank the current Co-Chairs of the GSC, Allyson Byrd and Jamie Solis, for their generous efforts in overseeing the Outstanding Mentor Awards and for all of their dedication to the GSC. As with all graduate student events at the NIH, this symposium would be nothing without the tireless help of the Office of Intramural Training and Education (OITE). We are grateful for its continual support and its provision of the NIH Graduate Student Research Training Awards. Moreover, we are particularly grateful to Dr. Philip Wang, Dr. Phil Ryan, Dr. Sharon Milgram, and other OITE staff, who have made planning this event very manageable and even more fulfilling. Lastly, we would also like to thank Dr. Alfredo Quiñones-Hinojosa for his enthusiasm and his willingness to step out of the operating room to deliver an exciting keynote address. Last, but not least, we would like to thank the graduate students, mentors, GPP alumni, and guests whose participation make this event possible.

The 11th Annual NIH Graduate Student Research Symposium Committee

Jamie Melissa Solís, NHLBI/University of Cambridge

Heysol Bermudez Cabrera, NINDS/Brown University

Jessica Hostetler, NIAID/ University of Cambridge

Sisi Liu, NICHD/ The Chinese University of Hong Kong

Bennett Waxse, NICHD/ University of Cambridge

PROGRAM OF EVENTS

9:00 am-10:00 am Lower Lobby	CURRENT STUDENT & ALUMNI NETWORKING Network with Graduate Partnerships Program (GPP) alumni. All are invited to attend.
10:00 am-10:15 am Room E1/E2	WELCOME Sharon L. Milgram, PhD Director, NIH Office of Intramural Training & Education (OITE)
10:15 am-11:45 am Room E1/E2	STUDENT ORAL PRESENTATIONS Michael H. Askenase, University of Pennsylvania, NIAID *Bone Marrow Resident NK Cells Direct the Development and Function of Innate Phagocytes During Infection* Rahilla A. Tarfa, Brown University, NINDS *Inhibition on Dopamine Neurons and the Role of a Slow A-type Current* Allyson L. Byrd, Boston University, NHGRI *Bacterial Strain Tracking Across the Human Skin Landscape* Wesley H. Stepp, Georgetown University, NIAID *Policing the Nucleus: Intrinsic Immune Proteins PML and Sp100 Differentially Regulate HPV Infection*
11:45 am-12:45 pm Atrium	POSTER SESSION I Odd numbered posters presenting
12:45 pm-1:45 pm Atrium	POSTER SESSION II Even numbered posters presenting
2:00 pm-3:00 pm Ruth L. Kirschstein Auditorium	KEYNOTE ADDRESS Alfredo Quiñones-Hinojosa, MD Director, Brain Tumor Surgery Program and Professor of Neurological Surgery, Johns Hopkins School of Medicine
3:00 pm-4:30 pm Ruth L. Kirschstein Auditorium	AWARDS CEREMONY Outstanding Mentor Awards Shih-Chieh Lin, MD, PhD Michael Otto, PhD Gwenyth R. Wallen, PhD Graduation Ceremony Certificates presented by: Sharon L. Milgram, PhD, Director, NIH Office of Intramural Training & Education NIH Graduate Student Research Awards (NGSRAs)

GPP GRADUATION AWARD RECIPIENTS

GPP GRADUATION AWARD RECIPIENT, DISSERTATION TITLE	NIH IC, MENTOR	UNIVERSITY, UNIVERSITY MENTOR
Matthew Richard Biancalana Biophysical Properties of NF-kappaB and MagT1: Proteins Mediating T Cell Activation and Effector Functions	NIAID Dr. Michael J. Lenardo	University of Cambridge Professor Sir Alan R. Fersht
Lindsay Beth Case Spatiotemproal Coordination of the Actin Cytoskeleton and Integrin Adhesion	NHLBI Dr. Clare Waterman	University of North Carolina at Chapel Hill
Ying-Han Chen Mechanisms of Non-Enveloped Viral Exit from the Host	NHLBI Dr. Nihal Altan-Bonnet	Rutgers University
Sana Sara Dastgheyb *Staphylococcus aureus* in the Synovial Environment: Supporting Long-Term Survival and Insensitivity to Antibiotics	NIAID Dr. Michael Otto	Thomas Jefferson University Dr. Noreen Hickok
Anne Sally Davis Improving Experimental Models for the Study of Human Influenza A Pathogenesis	NIAID Dr. Jeffery K. Taubenberger Dr. James H. Shelhamer	North Carolina State University
Blair Lynn DeBuysscher Characterization of Nipah Virus Pathogenicity *In vitro* and *In vivo* and Protection from Disease Using a Single Dose Recombinant Vaccine	NIAID Dr. Heinz Feldmann	University of Montana Dr. Scott Wetzel
Thao Phuong Do Imaging of HIV-1 Spread from T cells and Macrophages to Astrocytes	NCI Dr. Sriram Subramaniam	University of Oxford Professor Quentin Sattentau
María Belén Eyheramonho Los Factores Genéticos del Hospedador Determinan el Curso Clínico y Evolutivo de la Hepatitis A	NIAID Dr. Sergio D. Rosenzweig	Universidad de Buenos Aires Dr. José Raul Oubiña
Kristin Ashley Filler Relationship of Mitochondrial Enzymes to Fatigue Intensity and Health-Related Quality of Life in Men with Prostate Cancer Receiving External Beam Radiation Therapy	NINR Dr. Leorey Saligan	Virginia Commonwealth University Dr. Debra Lyon Dr. Nancy McCain
Miruna Georgiana Ghinia Molecular Tools to Study the Development and Organization of the Retinal Neuronal Networks	NEI Dr. Tudor Badea	Babes Bolyai University, Cluj Napoca, Romania Dr. Octavian Popescu Dr. Enrica Strettoi
Anderson Guimaraes Baptista Costa Role of Netose in Leishmania Infection	NIAID Dr. Jesus Valenzuela Dr. Fabiana Oliveira	Federal University of Rio de Janeiro

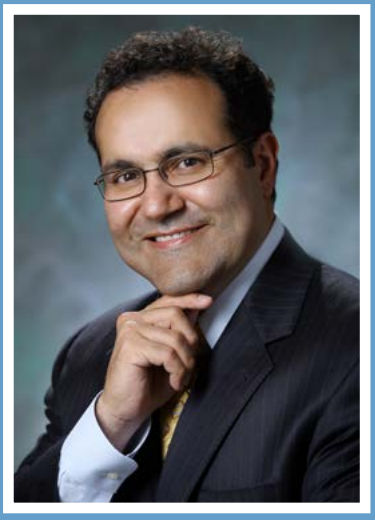
GPP GRADUATION AWARD RECIPIENT, DISSERTATION TITLE	NIH IC, MENTOR	UNIVERSITY, UNIVERSITY MENTOR
Weisheng Guo CuInS/ZnS Quantum Dots Based Multifunctional Nanoprobes Used for Tumor Diagnosis	NIBIB Dr. Shawn Chen	Tianjin University Dr. Jin Chang
Erik Niko Espiritu Gutierrez Role of Translation Factor eIF5A and its Hypusine Modification in Synthesis of Polyproline Proteins	NICHD Dr. Thomas E. Dever	Johns Hopkins University
Alyson Elizabeth Hanish Sleep-related Phenotypes: Adolescence and PAX6 Haploinsufficiency	NINR Dr. Joan Han	University of Iowa Dr. Janet Williams
Jill Shizuko Harunaga Cell and Matrix Dynamics during Branching Morphogenesis	NIDCR Dr. Kenneth M. Yamada	University of North Carolina at Chapel Hill
Matthew F. Jones MicroRNA-215 Regulates Differentiation in Colorectal Cancer Stem Cells	NCI Dr. Ashish Lal	University of Oxford Professor Sir Walter Bodmer
Matthew Lawrence Kutys A Novel, Matrix-Specific GEF/GAP Interaction Regulates Rho GTPase Crosstalk Critical for 3D Collagen Migration	NIDCR Dr. Kenneth M. Yamada	University of North Carolina at Chapel Hill
Abasha Nakita Lewis A Dynamic Role for Bcl-xL in Cellular Metabolism and Apoptosis: Calcium Regulation at the ER-Mitochondria Interface	NIDA Dr. Tsung-Ping Su	Johns Hopkins University
Tamara R. Litwin Effects of DNA Topology on Enzyme Binding and Activity	NHLBI Dr. Keir Neuman	University of Cambridge Dr. Ian Holt
Xiaozhuo Liu Generation of Induced Pluripotent Stem Cells for the Study of Autism Spectrum Disorder	NICHD Dr. Owen M. Rennert	The Chinese University of Hong Kong Prof. Kwok-Pui Fung Prof. Wai-Yee Chan
Chang Liu Lineage Specification of Ovarian Theca Cells Requires Multi-cellular Interactions via Oocyte and Granulosa Cells	NIEHS Dr. Humphrey Yao	University of Illinois at Urbana-Champaign
Geoffrey Martin Lynn Polymer Carriers of Toll-Like Receptor-7/8 Agonists as Vaccine Adjuvants	NIAID Dr. Robert Seder	University of Oxford Dr. Leonard Seymour
Paige Alexandra Oliver Maas Synthesizing Data Sources to Develop and Update Risk Models	NCI Dr. Nilanjan Chatterjee	Johns Hopkins University Dr. Mei-Cheng Wang

GPP GRADUATION AWARD RECIPIENTS

GPP GRADUATION AWARD RECIPIENT, DISSERTATION TITLE	NIH IC, MENTOR	UNIVERSITY, UNIVERSITY MENTOR
Matteo Manca Innovative Approaches for Rapid Antemortem Diagnosis of Prion Disorders and to Predict Synergistic Effects of Drug Combinations	NIAID Dr. Byron Caughey	Università degli Studi di Cagliari Dr. Alessandra Pani
Evan Maxwell Decoding Function Through Comparative Genomics: From Animal Evolution to Human Disease	NHGRI Dr. Andy Baxevanis	Boston University Dr. Avi Spira
Darpan K. Medhi The Repair of DSBs Catalyzed by VMA1 Derived Endonuclease by Homologous Recombination During Meiosis	NCI Dr. Michael J. Lichten	The University of Sheffield Professor Alastair S. H. Goldman
Jorge David Mendez-Rios Investigation of Poxvirus Host-range and Gene Expression in Mammalian Cells	NIAID Dr. Bernard Moss	University of Maryland, College Park Dr. Jeffrey DeStefano
Angel N. Morrow Examining the Role of STATs and STAT Signaling in the Induction, Enhancement, and Prolonged Duration of Antiviral Activity by IFN-γ and IFN-α2a in Combination With Ribavirin	NIAID Dr. Kathryn C. Zoon	Georgetown University
Aidan Peter Murphy Neural Mechanisms for Reducing Uncertainty in 3D Depth Perception	NIMH Dr. David Leopold	University of Birmingham Dr. Andrew Welchman
Fatima Nawaz A Molecular Characterization of the HIV Envelope Protein Binding to Integrin-$\alpha4\beta7$ and the Functional Implications of this Interaction in HIV Pathogenesis	NIAID Dr. James Arthos Dr. Anthony Fauci	New York University
Ashley Simone Parker Small RNA Regulation of an Outer Membrane Protein TolC	NCI Dr. Susan Gottesman	Howard University Dr. Yasmine Kanaan
Nilam Patel Interactions of Anxiety and Cognition: Influence of Induced-anxiety and Cognitive Load and Individual Differences in Age and Trait-anxiety	NIMH Dr. Monique Ernst	American University
Atish Sharad Patel Suppression of ABCG2-mediated MDR *in vitro* and *in vivo* by a Novel Inhibitor of ABCG2 Transport	NCI Dr. Suresh V. Ambudkar	St. John's University
Yanwei Qi Regulation of *Plasmodium yoelii* Oocyst Development by Strain- and Stage-specific Small Subunit rRNA	NIAID Dr. Xinzhuan Su	Xiamen University

GPP GRADUATION AWARD RECIPIENT, DISSERTATION TITLE	NIH IC, MENTOR	UNIVERSITY, UNIVERSITY MENTOR
Jermaine L. Ross The Discovery and Characterization of Cis-Regulatory DNA within the Drosophila pdm-1 and pdm-2 Gene Locus	NINDS Dr. Ward F. Odenwald	Brown University
Szilard Sajgo The Role of Brn3 Transcription Factors in Specification and Development of Neuronal Cell Types	NEI Dr. Tudor C. Badea	Babes Bolyai University Prof. Dr. Octavian Popescu
Amy E. Seitz Epidemiology, Spatial Distribution and Treatment Patterns of Blastomycosis in the United States	NIAID Dr. D. Rebecca Prevots Dr. Steven Holland	The George Washington University Dr. Daniel Hoffman
Stal Saurav Shrestha The Role of the Serotonergic System and the Effects of Antidepressants During Brain Development Examined Using *in vivo* PET imaging and *in vitro* Receptor Binding	NIMH Dr. Robert B. Innis	Karolinska Institutet Dr. Per Svenningsson
John Kyle Simmons A Systems Approach to Understand the Molecular Synergy of Combined mTOR/Histone Deacetylase (HDAC) Inhibition in the Treatment of Cancer	NCI Dr. Beverly Mock	Georgetown University
Christina Marie Slota The Effects of Chronic Stress on CD8 T cells in Human Adults: An Examintaion from Bench to Bedside	NINR Dr. Nan-Ping Weng Dr. Margaret Bevans	University of Pennsylvania Dr. Connie Ulrich
Natasha Spottiswoode Hepcidin in Malarial Anemia	NIAID Dr. Patrick Duffy	University of Oxford Dr. Hal Drakesmith
Veronica Veschi Tailoring and Targeting Neuroblastoma Therapy: From a Candidate Gene to a Screening Approach	NCI Dr. Carol Thiele	La Sapienza University of Rome Dr. Giuseppe Giannini
Michael Shaofei Zhang Mechanistic Study of RanGTPase Guanine Exchange Factor (RCC1) Dynamics in Mitosis	NICHD Dr. Mary Dasso	Chinese University of Hong Kong Professor Wing Ping Fong
Kristen Zukosky Molecular Basis of Congenital Disorders of Muscle: From Genetic Diagnosis to Cellular Modeling of Actinopathies and Alpha-Dystroglycanopathies	NINDS Dr. Carsten Bonnemann	Brown University

KEYNOTE SPEAKER



ALFREDO QUIÑONES-HINOJOSA, MD

Director, Brain Tumor Surgery Program and Professor of Neurological Surgery, Johns Hopkins School of Medicine

Dr. Alfredo Quiñones-Hinojosa (often referred to as Dr. Q) was born in 1968 in a little village near Mexicali, Mexico. He spent his childhood in Mexico until he jumped the border fence into the United States at the age of 19. Speaking no English at that time, he worked on farms outside of Fresno, California earning money to take English classes. From there he took classes at San Joaquin Delta College in California and earned his bachelor's degree in psychology at the University of California, Berkeley. In fact, he graduated with highest honors.

Dr. Q received a medical degree from Harvard University, where he graduated cum laude. He went on to complete his residency and a postdoctoral fellowship at the University of California, San Francisco. At The Johns Hopkins University, Dr. Quiñones is a Professor of Neurosurgery and Oncology, Neuroscience and Cellular and Molecular Medicine. He directs the Brain Tumor Surgery Program at Johns Hopkins Bayview Hospital and the Pituitary Surgery Program at the Johns Hopkins Hospital. He focuses on the surgical treatment of primary and metastatic brain tumors, with an emphasis on motor and speech mapping during surgery.

Named as one of the 100 most influential Hispanics in 2008, Dr. Q was also selected by Popular Science magazine as one of their 6th Annual Brilliant Ten in their search for young genius influencing the course of science. Dr. Q has published over 250 peer-reviewed articles and over 40 book chapters and has edited two books on stem cells. He is the lead editor for the 6th edition of *Schmidek and Sweet's Operative Neurosurgical Techniques*, the world's preeminent encyclopedia of neurosurgery. He has also published an autobiography, "Becoming Dr. Q", about his journey from migrant farm worker to brain surgeon, in both English and Spanish.

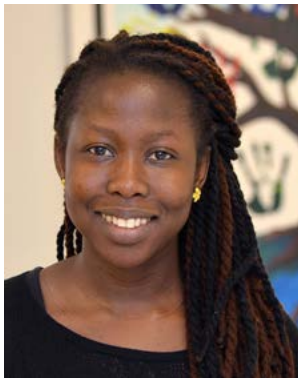
Dr. Q leads cutting edge research to cure brain cancer in his Brain Tumor Stem Cell Laboratory. He conducts numerous research efforts on elucidating the role of stem cells in the origin of brain tumors and the potential role stem cells can play in fighting brain cancer and regaining neurological function. He has received R01 funding from the NIH for his work with stem cells and cancer and his awards also include grants from the Howard Hughes Medical Institute Physician-Scientist Early Career Award, the Robert Wood Johnson Foundation, an the Maryland Stem Cell Foundation. Dr. Q has given over 250 invited lectures nationally and internationally, including visiting professorships at several universities.

STUDENT SPEAKERS

MIKE

MICHAEL H. ASKENASE, UNIVERSITY OF PENNSYLVANIA, NIAID

Mike's interest in immunology began as an undergraduate research associate at Biogen Idec, where he worked to develop a chimeric antibody against Toll-Like Receptor 4. After graduating from Tufts University in 2006, he joined the lab of Dr. Ana Soto & Dr. Carlos Sonnenschein at Tufts Medical School as a research technician. His work there focused on the effects of estrogenic compounds absorbed from plastics, including Bisphenol A (BPA), on development of mammary tumors and the role of the innate immune system in controlling the tumor microenvironment. In 2010, Mike joined the University of Pennsylvania-NIH Immunology Partnership program. Under the direction of Dr. Yasmine Belkaid in NIAID, his thesis project focuses on identifying the signals that educate early innate immune responses to infection, particularly during development in the bone marrow. Mike hopes that a greater understanding of this process will provide insight into how immune development becomes dysregulated in chronic inflammation and cancer.



RAHILLA

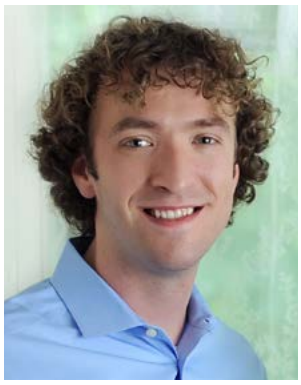
RAHILLA A. TARFA, BROWN UNIVERSITY, NINDS

Rahilla Ali Tarfa attended the University of Maryland, Baltimore County (UMBC) where she majored in Bioinformatics and Computational Biology. During her undergraduate career, she worked on a number of projects that ranged from bioinformatics to neuroscience. In particular, she studied the role of Caherin-13 and Rem2 in inhibitory synapse formation in the lab of Dr. Suzanne Paradis (PhD) during two consecutive summers spent at Brandeis University. After graduating with a B.S., she joined the partnership program between NIH and Brown University. Currently a 4th year PhD candidate in the lab of Dr. Zayd Khaliq (PhD), her thesis work is on the integrative mechanisms of VTA midbrain dopamine neurons and their underlying ionic mechanisms. By understanding the functional heterogeneity of midbrain dopamine neurons, she hopes to contribute to the field's understanding of how dopamine neurons mediate different circuits and behaviors as well as how these neurons are differentially affected in a number of disorders.

ALLYSON

ALLYSON L. BYRD, BOSTON UNIVERSITY, NHGRI

Allyson began her scientific career as an undergraduate researcher at the University of Georgia. After working in labs with flies, plants, and parasites, she decided she preferred computers and writing algorithms to traditional bench science. Upon completing a summer internship at the NIH, Allyson decided to pursue a degree in bioinformatics in the NIH-Boston University Graduate Partnership Program. Under the direction of Dr. Julie Segre at the NHGRI and Dr. Yasmine Belkaid at the NIAID, Allyson has developed pipelines to analyze next generation sequencing data. For her thesis project, Allyson is strain tracking bacteria in metegenomic samples of the skin microbiome. By analyzing the strains present in healthy individuals, she hopes to understand whether certain strains of bacteria play a role in the progression of skin diseases, such as atopic dermatitis.



WESLEY

WESLEY H. STEPP, GEORGETOWN UNIVERSITY, NIAID

Wesley Stepp began his career in science as an undergraduate research assistant in an organic chemistry laboratory at Union University where he studied the synthesis of branched chiral compounds and their use in separating racemic mixtures. He earned his master's degree in microbiology from Georgetown University in 2009. He joined the NIH-GPP as a Georgetown independent pre-doctoral fellow in 2010. Under the direction of Dr. Alison McBride (NIAID), he has investigated how human papillomaviruses (HPVs) interact with the intrinsic immune response of primary skin cells. His thesis examines a principal structure of intrinsic immunity, Nuclear Domain 10, and its manipulation by HPV during infection. He will continue his scientific training by attending medical school at the University of North Carolina at Chapel Hill in the fall of 2015.

OUTSTANDING MENTOR AWARD RECIPIENTS

DR. LIN

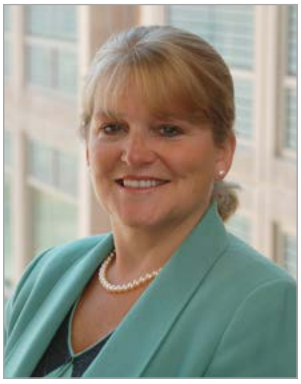
SHIH-CHIEH LIN, MD, PHD

Dr. Lin received his MD from National Taiwan University in 2000 and PhD in Neurobiology from Duke University in 2006. He joined the NIA in 2009 as an investigator in the Laboratory of Behavioral Neuroscience. Dr. Lin's main research focus is to elucidate how the brain pays attention to motivationally salient stimuli by engaging a key neural circuit that his lab identified in recent years – salience-encoding neurons in the basal forebrain. Studies in his lab are guided by the hypothesis that cortically projecting GABAergic neurons in the basal forebrain encode the motivational salience of attended stimuli and translate this salience signal into fast and widespread amplification of cortical activity, resulting in enhanced behavioral performance. By combining neuronal ensemble recordings in behaving rodents with behavioral, computational and optogenetic techniques, the Lin lab has demonstrated that salience-encoding basal forebrain neurons bidirectionally control both the speed of response generation and inhibition, and are capable of generating an event-related potential response in the frontal cortex. Dr. Lin received the 2008 and 2010 Young Investigator Award from NARSAD, and the Pathway to Independence (K99) Award from the NIMH in 2009.

DR. OTTO

MICHAEL OTTO, PHD

Dr. Otto is an expert in bacterial pathogenesis and antimicrobial resistance and is interested predominantly in how *Staphylococcus aureus* and other staphylococcal pathogens cause disease in humans. A native of Germany, he studied biochemistry at the University of Tubingen and received his PhD from the Microbial Genetics department of that university. After a brief post-doctoral stay at the same institution, he was hired as a tenure-track investigator by the Laboratory of Human Bacterial Pathogenesis (LHBP), NIAID, at the NIAID Rocky Mountain Laboratories facility in Montana. After receiving tenure in 2008, he and his laboratory moved to the Bethesda main campus, where the laboratory (Pathogen Molecular Genetics section, LHBP) is now located in building 33, soon to move to building 50. Dr. Otto's current research focuses on mechanisms by which *staphylococci* evade elimination by human immune defenses. This includes the study of a novel family of peptide toxins, which kill human red and white blood cells. Furthermore, he studies biofilms, sticky bacterial agglomerations that provide resistance to immune defenses and antibiotic treatment. He has been particularly interested in the evolution of virulence in methicillin-resistant *S. aureus* (MRSA), especially in those strains that have evolved to combine extraordinary virulence with antimicrobial resistance.



DR. WALLEN

GWENYTH R. WALLEN, PHD

Gwenyth Wallen, RN, PhD is currently the Deputy Chief for Research and Practice Development and Chief of Nursing Research and Translational Science at the NIH Clinical Center. Her clinical research specializations include health behavior and health disparities research with special emphasis on qualitative and quantitative methodologies and measurement in chronic disease management and end-of-life care. Prior to beginning her career as a clinical nurse scientist she held advance practice roles as the Clinical Specialist for Neonatology and Clinical Manager of the Level III NICU at the Washington Hospital Center, in Washington, DC. Dr. Wallen also served as a post-doctoral research associate in the Department of Family Studies at the University of Maryland. Dr. Wallen has served as a member of the NICHD Institutional Review Board since 2001. She currently serves as an Adjunct Associate Professor at University of Maryland in the School of Public Health. She also serves as an Adjunct Assistant Professor at the Uniformed Services University of Health Sciences in the Graduate School of Nursing. Dr. Wallen has a BS in Nursing from the University of Maryland, a MA in Management and Supervision from Central Michigan University, and a PhD in Health Education from the University of Maryland. In 2008 she completed the 2-year Bravewell Fellowship in Integrative Medicine at the University of Arizona as part of her developing research portfolio in integrative health.

STUDENTS *Listed alphabetically by name*

Poster #	Last Name, First	IC	University
1	Afshari, Ali	NICHD	The George Washington University
63	Anderson, Afrouz	NICHD	University of California, Davis
25	Archer, Eva	NIAID	University of Cambridge
37	Askenase, Michael	NIAID	University of Pennsylvania
97	Bai, Ruiliang	NICHD	University of Maryland, College Park
42	Bareille, Joseph	NICHD	Universite Paris Descartes
36	Beedie, Shaunna	NCI	University of Aberdeen
73	Benjamini, Dan	NICHD	Tel Aviv University
104	Bermudez Cabrera, Heysol	NINDS	Brown University
61	Bondy, Adrian	NEI	Brown University
9	Brickley, Elizabeth	NIAID	University of Cambridge
107	Brooks, Alyssa	CC	University of Maryland, College Park
50	Bulger, David	NIDDK	University of Cambridge
78	Bullock, Jeanee	NEI	Georgetown University
8	Burman, Bharat	NCI	Tufts University
108	Burnett, Joey	NIDDK	Brown University
4	Burrell, Allison	NCI	The George Washington University
5	Byrd, Allyson	NHGRI	Boston University
103	Cheng, Xiutang	NINDS	Shanghai Jiao Tong University School of Medicine
65	Clarke, Akanni	NINDS	The George Washington University
57	Coons, Laurel	NIEHS	Duke University
54	Cross, Joanna	NICHD	University of Oxford
43	Dastgheyb, Sana	NIAID	Thomas Jefferson University
109	de la Cruz Landrau, Angel	NINDS	Universidad Central del Caribe
90	Deasy, Sarah	NCI	The George Washington University
26	Dine, Jennifer	NINR	University of Missouri
76	DuChez, Brian	NIDCR	Georgetown University
3	Easton, Alice	NIAID	Imperial College London
95	Fallon, Rebecca	NIDA	Johns Hopkins University
80	Fan, Jing	NIBIB	Southeast University
10	Fox, Caitlin	NICHD	Johns Hopkins University
85	Fulton, Kara	NINDS	Brown University
70	Gary, Joy	NCI	Michigan State University
41	Gieseck, Richard	NIAID	University of Cambridge
77	Grodin, Erica	NIAAA	Brown University
30	Hamilla, Susan	NCI	University of Maryland, College Park
69	Hegarty, Catherine	NIMH	Brown University
27	Hostetler, Jessica	NIAID	University of Cambridge
48	Imtiaz, Ayesha	NIDCD	University of the Punjab, Lahore, Pakistan
15	Jameel, Nader	NHGRI	The George Washington University

STUDENTS *Listed alphabetically by name*

Poster #	Last Name, First	IC	University
105	Jiang, Xu	NINDS	University of Maryland, College Park
16	Johnson, Debra	NHLBI	University of Arizona
56	Joy, Jaimy	NIA	Johns Hopkins University
47	Kapnick, Senta	NHGRI	Johns Hopkins University
60	Kennard, Andrea	NIAID	Johns Hopkins University
7	Kumar, Amit	NIDDK	Johns Hopkins University
62	LaBarre, Brenna	NHGRI	Boston University
53	Lee, Sun	NIAID	University of Cambridge
111	Lendvai, Nikoletta	NICHD	Semmelweis University, Budapest, Hungary
39	Leney-Greene, Michael	NIAID	University of Pennsylvania
13	Lerro, Catherine	NCI-DCEG	Yale University
101	Li, Xiaozhen	NINDS	Karolinska Institutet
84	Lienert, Jeffrey	NHGRI	University of Oxford
35	Lingemann, Matthias	NIAID	Baunschweig University of Technology
46	Lokanga, Rachel	NIDDK	University of Cape Town
58	Marler, Laura	NICHD	Johns Hopkins University
81	Marquart, Gregory	NICHD	University of Maryland, College Park
96	Mendes-Sousa, Antonio	NIAID	Universidade Federal de Minas Gerais
74	Michael, Helen	NCI	University of Maryland, College Park
34	Milberg, Oleg	NIDCR	Rutgers University
19	Miller, Stephanie	NIMH	University of Maryland, College Park
29	Morabito, Kaitlyn	NIAID	Georgetown University
40	Naik, Swapna	NHLBI	University of Sunderland
89	Natrajan, Muktha	NINDS	University of Cambridge
14	Nezich, Catherine	NINDS	University of Cambridge
83	Nixon-Abell, Jonathon	NINDS	University College London
82	Patange, Simona	NCI	University of Maryland, College Park
64	Patel, Shashank	NCI	Georgetown University
112	Pellegrini, Laura	NIA	University College of London
114	Phillips, Ryan	NCCAM	University of New Hampshire
28	Plevock, Karen	NHLBI	University of North Carolina at Chapel Hill
44	Pluchino, Kristen	NCI	University of Oxford
102	Raven, Erika	NINDS	Georgetown University
11	Reyes-Guzman, Carolyn	NCI	The George Washington University
45	Reynolds, Sara	NIAID	University of Maryland, College Park
92	Risso, Davide	NIDCD	University of Bologna
2	Ritter, Alex	NICHD	University of Cambridge
75	Rubinstein, Daniel	NIMH	Brown University
86	Shahni Karamzadeh, Nader	NICHD	George Mason University

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88	Shivaprasad, Nityashree	NCI	Georgetown University
18	Simons Wires, Emily	NIDA	University of Maryland, Baltimore
110	Slocomb, Julia	NIDA	Johns Hopkins University
59	Solis, Jamie	NHLBI	University of Cambridge
68	Spurrier, Josh	NINDS	Johns Hopkins University
98	Steel, Adam	NIMH	University of Oxford
100	Steemers, Bernardus Martinus	NIMH	Radboud University Nijmegen
51	Stepp, Wesley	NIAID	Georgetown University
21	Stuart, Carey	NIAID	University of Maryland, College Park
22	Tan, Irene	NCI	Johns Hopkins University
93	Tarfa, Rahilla A.	NINDS	Brown University
31	Tosh, Kevin	NIAID	Georgetown University
12	Turnquist, Casmir	NCI	University of Oxford
33	VanBlargan, Laura	NIAID	University of Maryland, College Park
79	Vargish, Geoffrey	NICHD	Brown University
55	Venkatesh, Madhvi	NCI	University of Oxford
87	Venniro, Marco	NIDA	University of Verona
72	Veschi, Veronica	NCI	La Sapienza University of Rome
23	Viollet, Coralie	NCI	University of Oxford
20	Wang, Hanbo	NICHD	The Chinese University of Hong Kong
6	Waxse, Bennett	NICHD	University of Cambridge
32	Weston, Mary	NINDS	Johns Hopkins University
66	Whitaker, Dustin	NEI	Texas A&M University
49	Witte, Steven	NIAID	University of Cambridge
106	Wong, Hiu-Tung	NIDCD	Johns Hopkins University
38	Xiao, Su	NIDDK	Johns Hopkins University
94	Yabe, Idalia	NHLBI	Georgetown University
71	Yang, Chen	NIDA	The Fourth Military Medical University
67	Zavala, Baltazar	NINDS	University of Oxford
17	Zhang, Shile	NCI	Boston University
52	Zhao, Haiqing	NCI	University of Maryland, College Park

POSTERS

1

The Use of Quantitative Diffuse Multi-spectral Imaging System to Assess the Treatment Outcome in Patients with Cushing's Syndrome

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Dynamic Modulation of Cortical Actin at the Immunological Synapse Controls Cytotoxic Granule Secretion

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How Can We Improve the Way Deworming Programs Are Evaluated?

Alice V. Easton, James Truscott, Roy M. Anderson, and Dr. Thomas B. Nutman

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4

The HEART-BREAK Study: Using the Gamma-H2AX Assay to Evaluate Diagnostic Ionizing Radiation Exposure from Cardiac Imaging

Allison S. Burrell, Jody E. Bindeman, Anthony Kaviratne, Daisuke Maeda, Panfilo Delacruz, Houria Balmakhtar, Todd C. Villines, Michael K. Cheezum, William M. Bonner and Christophe E. Redon

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5

Bacterial Strain Tracking Across the Human Skin Landscape

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Motor Proteins in Gap Junction Internalization and Degradation

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7

The Beta-3 Adrenergic Agonist (CL-316,243) Restores the Expression of Down-Regulated Fatty Acid Oxidation Genes in Type 2 Diabetic Mice.

Amit Kumar, Emily Gallagher, Derek LeRoith, Michael J. Betenbaugh, and Joseph Shiloach

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Epigenetics of Chromosome Breakage Sites and Translocations

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The Life Course Epidemiology of Severe Malarial Anemia

Elizabeth B. Brickley, Edward Kabyemela, Alassane Dicko, Robert Morrison, Angela M. Wood, Michal Fried, and Patrick E. Duffy

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10

Fishing for Factors in Self-organization of Biological Systems: Heparan Sulfate Proteoglycans Regulate FGF Signaling in the Zebrafish Lateral Line

Caitlin M. Fox and Ajay B. Chitnis

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11

Demographic, Smoking and Behavioral Characteristics of Light and Intermittent Smokers Using U.S. National Health Survey Data

Carolyn M. Reyes-Guzman and Neil E. Caporaso

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12

P53 Isoforms in Brain Aging and Neurodegeneration

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13

Organophosphate Insecticide Use and Cancer Incidence Among Spouses of Oesticide Applicators in the Agricultural Health Study

Catherine C. Lerro, Stella Koutros, Gabriella Andreotti, Nicole C. Deziel, Melissa C. Friesen, Michael C. Alavanja, Aaron Blair, Jane A. Hoppin, Dale P. Sandler, Jay H. Lubin, Xiaomei Ma, Yawei Zhang, and Laura E. Beane Freeman

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14

MiT/TFE Transcription Factors Are Activated During Mitophagy Downstream of Parkin and Atg5

Catherine L. Nezich, Adam Fogel, Chunxin Wang, and Richard J. Youle

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Exploration of ZNF154 CpG Island as a Clinical Pan-Cancer Biomarker

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T Cell Activation Requires the Clathrin Independent Endosomal System

Debra L. Johnson, Jean M. Wilson, and Julie G. Donaldson

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17

MYCN Controls an Alternative RNA Splicing Program in High-risk Neuroblastoma

Shile Zhang and Javed Khan

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18

Cafeteria Diet Alters Endoplasmic Reticulum Calcium Homeostasis in Hepatocytes of Rats

Emily Simons Wires, Kathleen A. Trychta, Mark J. Henderson, and Brandon K. Harvey

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19

Non-Parabolic Spread of Activity Within Neuronal Avalanches Indicates Preferred Spatial Pathways in Cortical Dynamics

Stephanie R. Miller, Shan Yu, and Dietmar Plenz

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20

The 31 Amino Acid YneM Protein Regulates Phosphate and Magnesium Availability in *Escherichia coli*

Hanbo Wang, Xuefeng Yin, Errett Hobbs, and Gisela Storz

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21

Analysis of the Concatemer Resolution Process in Vaccinia Virus

Carey A. Stuart and Dr. Bernard Moss

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22

Regulated Proteolysis of a Morphogenetic Protein Mediates a Developmental Checkpoint in the Bacterium *Bacillus subtilis*

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23

Integrated Analysis of the Changes in microRNA and mRNA Expression Profiles Induced by Kaposi's Sarcoma-associated Herpesvirus Infection

Coralie Viollet, David A. Davis, Martin Reczko, Joseph M. Ziegelbauer, Francesco Pezzella, Jiannis Ragoussis, and Robert Yarchoan

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24

Hydrogels as Synthetic Matrices to Explore Matrix and PKA Effects on Osteogenesis

Jenna M. Shapiro, Michelle L. Oyen, and Constantine A. Stratakis

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25

Evolution of Antigen-specific Immunoglobulin Heavy Chain Repertoires in Early SIV Infection

Eva J. Archer, Rachael Bashford-Rogers, Brenna J. Hill, Daniel C. Douek, Paul Kellam, and Richard A. Koup

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26

The Identification and Characterization of Novel Regulators of TRAIL Sensitivity in Breast Cancer Cells

Jennifer L. Dine, Sireesha V. Garimella, Kristie Gehlhaus, Magda Grandin, Natasha Caplen, and Stanley Lipkowitz

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27

A Library of *Plasmodium vivax* Recombinant Proteins Reveals Novel Interactions

Jessica B. Hostetler, Sumana Sharma, Gavin J. Wright, Julian C. Rayner, and Rick M. Fairhurst

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28

The Centrosome/Insulator Protein CP190 Associates with Microtubules Using a Novel N-terminal Region Potentiated by BTB Domain-dependent Dimerization

Karen M. Plevock, Rodrigo X. Guillen, Brian J. Galletta, Nasser M. Rusan, and Kevin C. Slep

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29

RSV Antigen-expressing MCMV Vectors Elicit Anti-viral CD8 T Cells and Decrease Viral Burden Following RSV Challenge

Kaitlyn M. Morabito, Tracy J. Ruckwardt, Allison M.W. Malloy, and Barney S. Graham

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30

Roles of Adhesion and Cytoskeletal Tension in mRNA Localization

Susan M. Hamilla, Helim Aranda-Espinoza, and Stavroula Mili

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31

Phagocytosis of *Toxoplasma gondii* by Primary Human Monocytes is Required for the Cytokine Response to Parasite Vita-PAMPs

Kevin W. Tosh, Steven M. Singer, Alan Sher, and Dragana Jankovic

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32

Probing the Mechanism of Lysosomal pH Homeostasis

Mary R. Weston and Joseph A. Mindell

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33

Context-dependent Cleavage by the West Nile Virus Protease Modulates the Efficiency of Virus Assembly

Laura A. VanBlargan, Kimberly A. Dowd, Kaitlin A. Davis, and Theodore C. Pierson

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34

Actin, Septins and Myosin Regulate Regulated Exocytosis in Exocrine Glands of Live Rodents

Oleg Milberg and Roberto Weigert

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35

Regulation of Human Parainfluenza Virus Type 3 Fusion Protein Expression and its Consequences for Virus Fitness and Immunogenicity

Matthias Lingemann, Sonja Surman, Emérito Amaro-Carambot, Anne Schaap-Nutt, Peter L. Collins and Shirin Munir

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36

Thalidomide: Old Drug, New Tricks.

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37

Bone Marrow Resident NK Cells Direct the Development and Function of Innate Phagocytes During Infection

Michael H. Askenase, Allyson L. Byrd, Denise Morais da Fonseca, Joanne E. Konkel, Norinne Lacerda-Queiroz, Howard A. Young, Xin-Shuan Su, John R. Grainger, and Yasmine Belkaid

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38

Engineering Towards Improved Functional Expression of Neurotensin Receptor from Mammalian Cells

Su Xiao, Yu-chi Chen, Jim F. White, Michael J. Betenbaugh, Reinhard Grisshammer, Scott E. Martin, and Joseph Shiloach

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39

Whole Exome Sequencing and Characterization of a Novel Monogenic Autoimmune Disorder

Michael A. Leney-Greene, Yu Zhang, Ahmet Ozen, Ismail Ogulur, Isil Barlan, Helen C. Su, and Michael J. Lenardo

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40

Study of Molecular Cloning and Characterization of *C. elegans* Phosphodiesterase 3(CEPDE3)

Swapna Naik, Arun Samidurai, Faiyaz Ahmad, Dong Keun Rhee, Steve C. Hockman, Babak Sabouri, Noel Carter, and Vincent C. Manganiello

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41

IL-13 Signaling via IL4Rα in Chronic S. Mansoni Infection Permits Ductular Reaction

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42

Investigating How Post-Translational Modification Controls Kinetochore Assembly

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43

Role of Phenol-Soluble Modulins in Formation of Antibiotic-Resistant Biofilms During *Staphylococcus Aureus* Joint Infection

Sana Dastgheyb, Amer E. Villaruz, Vee Y. Tan, Anthony C. Duong, Katherine Y. Le, Som S. Chatterjee, Hwang-Soo Joo, Gordon Y. C. Cheung, Noreen J. Hickok, and Michael Otto

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44

Chimeric Isoforms of P-glycoprotein for Functional and Structural Investigations

Kristen M. Pluchino, Matthew D. Hall, Janna Moen, Suneet Shukla, Suresh Ambudkar, Fei Zhou, Di Xia, Deborah Gill, Steven Hyde, and Michael M. Gottesman

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45

Characterization of Cowpox Virus 219: Story of the Largest Poxviral Protein Cleaved Into Smaller Fragments

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46

X Inactivation Plays a Major Role in the Gender Bias in Somatic Expansion in a Mouse Model of the Fragile X-related Disorders: Implications for the Mechanism of Repeat Expansion

Rachel Lokanga, Xiao-Nan Zhao, Ali Entezam, and Karen Usdin

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47

Inducible T Cell Kinase Regulates the Late Stages of CD8+ T Lymphocyte Cytolytic Effector Function

Senta Kapnick and Pam Schwartzberg

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48

Alleles of the Reported Deafness Genes are Major Contributors to the Etiology of Moderate to Severe Hearing Loss in Pakistani Population

Ayesha Imtiaz, Rasheeda Bashir, Ghulam Mubtaja, Azra Maqsood, Ihtisham Bukhari, Atteeq U. Rehman, Robert J. Morell, Thomas B. Friedman, and Sadaf Naz

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49

Assessing the Function of Long Non-Coding RNAs Through Targeted Mutagenesis

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50

Modeling Evolutionarily Conserved Human Insulin Receptor Mutations in the Worm

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51

Policing the Nucleus: Intrinsic Immune Proteins PML and Sp100 Differentially Regulate HPV Infection

Wesley H. Stepp and Alison A. McBride

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52

The Binding Landscapes of the H3/H4 and CENP-A/H4 Dimers

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53

Malaria in the Placenta: a Closer Examination of the var2CSA-trophoblast Interaction

Sun Jin Lee, Steve Charnock-Jones, and Patrick Duffy

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54

Determination of the Allelic Frequency of Two "Common" Disorders of Cholesterol Homeostasis by Analysis of Massively Parallel Sequencing Data

Joanna L. Cross, James Iben, Joan Bailey-Wilson, Leslie G. Biesecker, Forbes D. Porter, and Christopher A. Wassif

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55

Structural Studies of Signal Transduction in the *E. coli* Serine Chemoreceptor

Madhvi J. Venkatesh, Soojay Banerjee, Oleg Kuybeda, Xiongwu Wu, and Sriram Subramaniam

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56

NF-kB in Cellular Senescence

Jaimy P. Joy, Mary Kaileh, and Ranjan Sen

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57

Uniform Amplification of Phage Display Libraries Using Microfluidic Technology

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58

Investigation of Factors Involved in Accurate Start Site Recognition for Translation Initiation

Laura E. Marler, Jyothsna Visweswaraiah, and Alan Hinnebusch

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59

Unique Single-Molecule Pull-Down Approach Yields Novel Insight into Myosin Protein Structure and Binding Partner Dynamics In Vivo

Jamie M. Solis, Folma Buss, and James R. Sellers

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60

Sex Happens: Evidence of Recombination within a Clade of *Toxoplasma gondii*

Andrea Kennard, Asis Khan, Mariam Quiñones, Kurt Wollenberg, Sundar Natarajan, Patricia A. Conrad, David S. Roos, and Michael E. Grigg

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61

Choice-Related Activity in Macaque Primary Visual Cortex Reflects Feedback

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DNA Methylation Studies in Khoesan Bushmen

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Prefrontal Cortex Hemodynamics and Age: a Pilot Study Using Functional Near Infrared Spectroscopy in Children

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Genomic Stress in Antigen Experienced T-lymphocytes

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A Characterization of Growth Cone Morphodynamics in a Live-pathfinding Axon

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Defining the Transcriptome of Every Cell class in the Neural Retina

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Human Subthalamic Nucleus Theta Coherence and Spike Phase Locking Delay Decision Making During Conflict

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Microarray Analysis of *Drosophila* Cdk5/p35 Kinase Mutants

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Ventral Striatal Dopamine Synthesis Correlates with Neural Activity During Reward Anticipation

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Genetic and Pharmacologic Inhibition of MTOR Delays Thymic Lymphoma Formation and Decreased CDK6 Levels

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Affective Circuits Involving the Prefrontal Cortex: An Optogenetic Study in Mice

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An Epigenetic Focused siRNA Screen Identifies Novel Druggable Targets That Inhibit Growth and Induce Differentiation in Neuroblastoma

Veronica Veschi, Zhihui Liu, Chunxi Wang, Ty Voss, Laurent Ozbun, Gordon Hager, Giuseppe Giannini, and Carol J. Thiele

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Nonparametric Porcine Spinal Cord Axon Diameter Distribution Using Double Pulsed-field Gradient MRI

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Role of UV in Initiation and Progression of Early Melanocytic Lesions

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Time-specific Alterations in Working Memory-related Beta Band Activity in Patients with Schizophrenia Studied with MEG While On and Off Antipsychotic Medication

Dani Rubinstein, Daniel Eisenberg, Frederick Carver, Tom Holroyd, Daniel Weinberger, Jose Apud, Richard Coppola, and Karen Berman

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Evaluating Durotaxis in a Three-dimensional Collagen Matrix

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Modulation of Brain Response During Effort-Based Decision-Making in Alcohol-Dependent Patients

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Towards the Development of PEDF-based Therapies: Expression, Purification, and Characterization of PEDF Versions

Jeanee Bullock, Federica Polato, and S. Patricia Becerra

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Persistent Inhibitory Circuit Deficits Emerge Following Chronic Prenatal Exposure to Exogenous Cannabinoids

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Mixed Agglutination Reaction Assay Based on Core-Shell Fe3O4@SiO2 Magnetic Nanobeads

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Light Modulation of the Acoustic Startle Response

Gregory D. Marquart and Harold Burgess

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Dissecting the Gene Regulatory Function of MYC with Single-molecule Analysis

Simona Patange and Daniel R. Larson

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The Importance of LRRK2-reticulon Interaction in Neurodegeneration

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Dynamic Diffusion Processes on Temporal Networks

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The Functional and Synaptic Connectivity among Periglomerular Interneurons and Mitral and Tufted Cells in the Mouse Olfactory Bulb

Kara A. Fulton and Kevin L. Briggman

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RELATIVE Brain Signature (RBS): A Population-Based Feature Extraction Technique to Identify Functional Biomarkers in the Brain of Alcoholic Subjects

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Persistent and Inflexible Palatable Food Preference in Rats with a History of Limited and Extended Access Methamphetamine Self-administration

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Antibody-based Therapeutics for Rhabdomyosarcoma

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Pioglitazone Enhances Immunoregulatory Functions of Monocytes in MS Patients

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Rnaseh2c and Emp1 Are Candidate Metastasis Susceptibility Genes in Breast Cancer

Sarah Deasy, Ngoc-Han Ha, and Kent Hunter

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Genetic Determinants of Menthol Perception in Tobacco Usage

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Inhibition on Dopamine Neurons and the Role of a Slow A-type Current

Rahilla A. Tarfa and Zayd Khaliq

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Barcoding as a Tool to Predict Integrating Vector Genotoxicity in HSPCs

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Determining Cellular Properties of Neuronal Ensembles in the Nucleus Accumbens Activated by Amphetamine Sensitization

Rebecca V. Fallon, Javier Rubio, and Bruce T. Hope

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Anopheles Albimanus gSG7 Salivary Protein: a Novel Inhibitor of the Complement System

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Efficient 2D MRI Relaxometry: A Potential Method for Quantitative MRI Parameter Mapping

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The Impact of Training with Reward on Functional Connectivity of the Brain

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Astrocytes Modulate the Activity of the Brainstem Neuronal Circuits

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The Role of the Nonhuman Primate Hippocampus in Memory-based Spatial Navigation

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Detection of Demyelination in Multiple Sclerosis by Analysis of T2* Relaxation at 7T

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***In vivo* Assessment of Age-related White Matter Differences Using T2* Relaxation**

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Axonal Autophagosomes Acquire Retrograde Motility Upon Fusion with Late Endosomes

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Subthalamic Nucleus-Globus Pallidus Neural Activity in an Awake Animal Model of Parkinson's Disease

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Indirect MRI Detection of Myelin Water Based on Water Exchange Properties

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Regulation of Synaptic Ribbon Formation by Intracellular Calcium Stores in the Sensory Hair Cell

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Sleep Disturbance and Relapse in Individuals with Alcohol Dependence: Preliminary Findings from an Exploratory Mixed Methods Study

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Food Anticipatory Activity Regulated by the Dorsomedial Hypothalamus

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Locking the Open State of a Voltage-dependent Concatemer Potassium Channel with Metal Bridges

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Hypothalamic Neuronal Circuits Driving Feeding Reward Behavior

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Evaluation of CPE ΔN mRNA as a Biomarker for Diagnosing Metastasis in Pheochromocytoma/ Paraganglioma Patients

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Dysregulated LRRK2 Signalling Cascade Leading to Microtubule Destabilisation in Parkinson's Disease

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Modeling the Effect of Intracellular Fibroblast Growth Factors on Voltage-gated Ion Channels and Intrinsic Membrane Properties of Primary Sensory Neurons

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